```
=> d his

     (FILE 'HOME' ENTERED AT 10:13:34 ON 03 MAR 2006)

     FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS,
     LIFESCI' ENTERED AT 10:14:17 ON 03 MAR 2006
L1             0 S "GST4(W)ALPHA"
L2            14 S GLYCOSYL (W) SULFOTRANSFERASE?
L3             9 DUP REM L2 (5 DUPLICATES REMOVED)
L4          2884 S GLYCOSYL (W) TRANSFERASE?
L5       7563699 S CLON? OR EXPRESS? OR RECOMBINANT
L6           765 S L4 AND L5
L7         57763 S "GST"
L8             7 S L6 AND L7
L9             4 DUP REM L8 (3 DUPLICATES REMOVED)
                 E ROSEN S D/AU
L10          789 S E3
                 E LEE J K/AU
L11         4665 S E3
                 E HEMMERICH S D/AU
L12          130 S E2
L13         5491 S L10 OR L11 OR L12
L14            0 S L4 AND L13
L15           25 S L7 AND L13
L16           11 DUP REM L15 (14 DUPLICATES REMOVED)

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 NEWS  4  DEC 14   2006 MeSH terms loaded in MEDLINE/LMEDLINE
 NEWS  5  DEC 14   2006 MeSH terms loaded for MEDLINE file segment of TOXCENTER
 NEWS  6  DEC 14   CA/CAplus to be enhanced with updated IPC codes
 NEWS  7  DEC 21   IPC search and display fields enhanced in CA/CAplus with the
                   IPC reform
 NEWS  8  DEC 23   New IPC8 SEARCH, DISPLAY, and SELECT fields in USPATFULL/
                   USPAT2
 NEWS  9  JAN 13   IPC 8 searching in IFIPAT, IFIUDB, and IFICDB
 NEWS 10  JAN 13   New IPC 8 SEARCH, DISPLAY, and SELECT enhancements added to
                   INPADOC
 NEWS 11  JAN 17   Pre-1988 INPI data added to MARPAT
 NEWS 12  JAN 17   IPC 8 in the WPI family of databases including WPIFV
 NEWS 13  JAN 30   Saved answer limit increased
 NEWS 14  JAN 31   Monthly current-awareness alert (SDI) frequency
                   added to TULSA
 NEWS 15  FEB 21   STN AnaVist, Version 1.1, lets you share your STN AnaVist
                   visualization results
 NEWS 16  FEB 22   Status of current WO (PCT) information on STN
 NEWS 17  FEB 22   The IPC thesaurus added to additional patent databases on STN
 NEWS 18  FEB 22   Updates in EPFULL; IPC 8 enhancements added
 NEWS 19  FEB 27   New STN AnaVist pricing effective March 1, 2006
 NEWS 20  FEB 28   MEDLINE/LMEDLINE reload improves functionality
 NEWS 21  FEB 28   TOXCENTER reloaded with enhancements
 NEWS 22  FEB 28   REGISTRY/ZREGISTRY enhanced with more experimental spectral
                   property data
 NEWS 23  MAR 01   INSPEC reloaded and enhanced

 NEWS EXPRESS  FEBRUARY 15 CURRENT VERSION FOR WINDOWS IS V8.01a,
               CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 19 DECEMBER 2005.
               V8.0 AND V8.01 USERS CAN OBTAIN THE UPGRADE TO V8.01a AT
               http://download.cas.org/express/v8.0-Discover/

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FILE 'HOME' ENTERED AT 10:13:34 ON 03 MAR 2006

=> files medline embase biosis biotechds scisearch hcaplus ntis lifesci
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	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'MEDLINE' ENTERED AT 10:14:17 ON 03 MAR 2006

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FILE 'LIFESCI' ENTERED AT 10:14:17 ON 03 MAR 2006
COPYRIGHT (C) 2006 Cambridge Scientific Abstracts (CSA)

=> s "GST4(w)alpha"
L1 0 "GST4(W)ALPHA"

=> s glycosyl (w) sulfotransferase?
L2 14 GLYCOSYL (W) SULFOTRANSFERASE?

=> dup rem l2
PROCESSING COMPLETED FOR L2
L3 9 DUP REM L2 (5 DUPLICATES REMOVED)

=> d 1-9 ibib ab

L3 ANSWER 1 OF 9 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
DUPLICATE 1
ACCESSION NUMBER: 2005-24126 BIOTECHDS
TITLE: New **glycosyl sulfotransferase**-3 (GST-3) polypeptide useful for identifying therapeutic agents, diagnosis or in the treatment of inflammation and autoimmune

related disorders;
production of a recombinant **glycosyl-sulfotransferase**-3 useful for an inflammation and autoimmune disease therapy and drug screening application

AUTHOR: BISTRUP A; ROSEN S D; HEMMERICH S
PATENT ASSIGNEE: UNIV CALIFORNIA; SYNTEX USA LLC
PATENT INFO: US 6933142 23 Aug 2005
APPLICATION INFO: US 2000-645078 23 Aug 2000
PRIORITY INFO: US 2000-645078 23 Aug 2000; US 1998-45284 20 Mar 1998
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2005-568980 [58]

AB DERWENT ABSTRACT:

NOVELTY - A **glycosyl sulfotransferase**-3 (GST-3) polypeptide present in other than its natural environment, comprising an amino acid sequence having at least 60% sequence identity to a fully defined sequence of 386 amino acids (SEQ ID NO: 2) and encoded by a nucleic acid comprising a nucleotide sequence having at least 75% identity to a fully defined sequence of 2043 bp (SEQ ID NO: 1), is new.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a composition comprising the GST-3 polypeptide cited above.

BIOTECHNOLOGY - Preferred Polypeptide: The polypeptide comprises SEQ ID NO: 2, and catalyzes the transfer of a sulfate group from a donor compound to a selectin ligand. The polypeptide is encoded by a nucleic acid comprising a nucleotide sequence having at least 90 or 95% identity to SEQ ID NO: 1. The selectin ligand is an E-, P- or L-selectin ligand that is GlyCAM-1, CD34, MadCAM-1, Sgp200 or podocalyxin.

ACTIVITY - Antiinflammatory; Immunosuppressive. No biological data given.

MECHANISM OF ACTION - **Glycosyl sulfotransferase**-3 agonist.

USE - GST-3 is useful for identifying therapeutic agents, diagnosis or in the treatment of inflammation and autoimmune related disorders

ADMINISTRATION - Routes of administration of the pharmaceutical compositions include oral, intramuscular, intraperitoneal, intravenous, transdermal, intratracheal, rectal and buccal. No dosages given.

EXAMPLE - No relevant example given.(46 pages)

L3 ANSWER 2 OF 9 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 2006:132270 BIOSIS
DOCUMENT NUMBER: PREV200600144454
TITLE: **Glycosyl sulfotransferases** GST-4 alpha, GST-4 beta, and GST-6.
AUTHOR(S): Rosen, Steven D. [Inventor]; Lee, Jin Kyu [Inventor]; Hemmerich, Stefan [Inventor]
CORPORATE SOURCE: San Francisco, CA USA
ASSIGNEE: The Regents of the University of California; Syntex (U.S.A.) LLC
PATENT INFORMATION: US 06852518 20050208
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (FEB 8 2005)
CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 22 Feb 2006
Last Updated on STN: 22 Feb 2006

AB Novel glycosylsulfotransferases (GST-4 alpha, GST-4 beta, and GST-6) and polypeptides related thereto, as well as nucleic acid compositions encoding the same, are provided. The subject polypeptides and nucleic acid compositions find use in a variety of applications, including various diagnostic and therapeutic agent screening applications. Also provided are methods of inhibiting selectin mediated binding events and methods of treating disease conditions associated therewith, particularly by administering an inhibitor of at least one of GST-4 alpha, GST-4 beta, and

GST-6. ACKNOWLEDGEMENT OF GOVERNMENT SUPPORT This invention was made with Government Support under Grant Number GM57411, awarded by the National Institutes of Health. The Government has certain rights in this invention.

L3 ANSWER 3 OF 9 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 2005:547254 BIOSIS
DOCUMENT NUMBER: PREV200510344522
TITLE: Methods of inhibition using **glycosyl sulfotransferase**-3.
AUTHOR(S): Bistrup, Annette [Inventor]; Rosen, Steven D. [Inventor]; Tangemann, Kirsten [Inventor]; Hemmerich, Stefan [Inventor]
CORPORATE SOURCE: San Francisco, CA USA
ASSIGNEE: The Regents of the University of the California; Syntex (U.S.A.) INC
PATENT INFORMATION: US 06844175 20050118
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (JAN 18 2005)
CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 7 Dec 2005
Last Updated on STN: 7 Dec 2005

AB A novel human glycosylsulfotransferase expressed in high endothelial cells (GST-3) and polypeptides related thereto, as well as nucleic acid compositions encoding the same, are provided. The subject polypeptides and nucleic acid find use in a variety of applications, including research, diagnostic, and therapeutic agent screening applications. Also provided are methods of inhibiting selectin mediated binding events and methods of treating disease conditions associated therewith, particularly by administering an inhibitor of at least one of GST-3 or KSGal6ST, or homologues thereof

L3 ANSWER 4 OF 9 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
DUPLICATE 2
ACCESSION NUMBER: 2002:281104 BIOSIS
DOCUMENT NUMBER: PREV200200281104
TITLE: Method of determining whether an agent modulates **glycosyl sulfotransferase**-3.
AUTHOR(S): Bistrup, Annette [Inventor]; Rosen, Steven D. [Inventor, Reprint author]; Tangemann, Kirsten [Inventor]; Hemmerich, Stefan [Inventor]
CORPORATE SOURCE: San Francisco, CA, USA
ASSIGNEE: The Regents of the University of California
PATENT INFORMATION: US 6365365 20020402
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (Apr. 2, 2002) Vol. 1257, No. 1. http://www.uspto.gov/web/menu/patdata.html. e-file.
CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 8 May 2002
Last Updated on STN: 8 May 2002

AB A novel human glycosylsulfotransferase expressed in high endothelial cells (GST-3) and polypeptides related thereto, as well as nucleic acid compositions encoding the same, are provided. The subject polypeptides and nucleic acid compositions find use in a variety of applications, including research, diagnostic, and therapeutic agent screening applications. Also provided are methods of inhibiting selectin mediated binding events and methods of treating disease conditions associated therewith, particularly by administering an inhibitor of at least one of GST-3 or KSGal6ST, or homologues thereof.

L3 ANSWER 5 OF 9 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN

DUPLICATE 3
ACCESSION NUMBER: 2001-06117 BIOTECHDS
TITLE: New **glycosyl-sulfotransferases** (GST)-4-alpha, GST-4-beta and GST-6 for diagnostic and therapeutic agent screening applications; vector-mediated gene transfer, expression in host cell, monoclonal antibody and transgenic animal for selectin binding-inhibitor, drug screening and disease therapy, diagnosis and gene therapy
AUTHOR: Rosen S D; Lee J K; Hemmerich S
PATENT ASSIGNEE: Univ.California
LOCATION: Oakland, CA, USA.
PATENT INFO: WO 2001006015 25 Jan 2001
APPLICATION INFO: WO 2000-US19741 19 Jul 2000
PRIORITY INFO: US 2000-593828 13 Jul 2000; US 1999-144694 20 Jul 1999
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2001-138471 [14]
AB A **glycosyl-sulfotransferase** (GST) (I) selected from the group GST-4-alpha, GST-4-beta and GST-6, is claimed. Also claimed are: a fragment of (I); a DNA (II) encoding (I); a DNA or its mimetic that hybridizes to (II) or its complementary sequence; an expression cassette (III) containing a transcriptional initiation region functional in an expression host and (II) under the transcriptional regulation of the transcriptional initiation region and a transcriptional termination region; a host cell (IV) containing (III); the cellular progeny of (IV); a method of producing (I); a monoclonal antibody that specifically binds to (I); and a non-human transgenic animal model for gene function, where the animal contains an introduced alteration in a gene encoding (I). (I) is useful for inhibiting a binding event between a selectin and a selectin ligand, which involves contacting the selectin with a non-sulfated selectin ligand. (II) encoding (I) is also useful in gene therapy to treat disorders such as acute or chronic inflammation and transplant tissue rejection and also for disease diagnosis. (44pp)

L3 ANSWER 6 OF 9 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 2001:427531 BIOSIS
DOCUMENT NUMBER: PREV200100427531
TITLE: Glycosly sulfortransferase-3.
AUTHOR(S): Bistrup, Annette [Inventor, Reprint author]; Rosen, Steven D. [Inventor]; Hemmerich, Stefan [Inventor]
CORPORATE SOURCE: San Francisco, CA, USA
ASSIGNEE: The Regents of the University of California; Syntex, Inc.,, Palo Alto, CA, USA
PATENT INFORMATION: US 6265192 20010724
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (July 24, 2001) Vol. 1248, No. 4. e-file. CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 12 Sep 2001
Last Updated on STN: 22 Feb 2002
AB A novel human glycosylsulfotransferase expressed in high endothelial cells (GST-3) and polypeptides related thereto, as well as nucleic acid compositions encoding the same, are provided. The subject polypeptides and nucleic acid compositions find use in a variety of applications, including research, diagnostic, and therapeutic agent screening applications. Also provided are methods of inhibiting selectin mediated binding events and methods of treating disease conditions associated therewith.

L3 ANSWER 7 OF 9 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
DUPLICATE 4
ACCESSION NUMBER: 2000-00104 BIOTECHDS

TITLE: Human and mouse **glycosyl-sulfotransferase** -3 and related polynucleotides; expression in mammalian host cell and antibody, used for disease diagnosis and gene therapy
AUTHOR: Bistrup A; Rosen S D; Tangemann K; Hemmerich S
PATENT ASSIGNEE: Univ.California; Syntex
LOCATION: Oakland, CA, USA; Palo Alto, CA, USA.
PATENT INFO: WO 9949018 30 Sep 1999
APPLICATION INFO: WO 1999-US4316 26 Feb 1999
PRIORITY INFO: US 1998-190911 12 Nov 1998; US 1998-45284 20 Mar 1998
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1999-580442 [49]

AB **Glycosyl-sulfotransferase**-3 (GST-3, 386 or 388 amino acids) present in other than its natural environment, is new. Also claimed are: a nucleic acid (2,032 or 1,893 bp) which encodes GST-3; an expression cassette under the control of initiation sequences and termination sequences; a host cell; a method of producing GST-3; a monoclonal antibody; a method for inhibiting the binding of a selectin and a selectin ligand; a method of inhibiting a selectin mediated binding event in a mammalian host; a method of modulating a symptom of a disease condition associated with a selectin mediated binding event; a method of diagnosing a disease state related to the abnormal levels of a sulfotransferase chosen from GST-3 and KSGal6ST; a method of determining whether an agent is capable of modulating the activity of a sulfotransferase chosen from GST-3 and KSGal6ST; and a non-human transgenic animal model for gst-3 gene function. The nucleic acid sequences, DNA probes and DNA primers derived from these, proteins and antibodies are useful in detecting homologs. The products are useful in the diagnosis of diseases associated with selectin binding interactions. (59pp)

L3 ANSWER 8 OF 9 SCISEARCH COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 1998:793511 SCISEARCH
THE GENUINE ARTICLE: 130CC
TITLE: Cloning and functional characterization of a human **glycosyl sulfotransferase**, that is highly restricted to high endothelial venules and confers expression of the L-selectin recognition epitope 6-sulfo sialyl Lewis x.
AUTHOR: Hemmerich S (Reprint); Bistrup A; Bakhta S; Gunn M D; Kannagi R; Rosen S D
CORPORATE SOURCE: Roche Biosci, Palo Alto, CA USA; Univ Calif San Francisco, San Francisco, CA 94143 USA; Aiichi Canc Res Inst, Nagoya, Aichi, Japan
COUNTRY OF AUTHOR: USA; Japan
SOURCE: GLYCOBIOLOGY, (NOV 1998) Vol. 8, No. 11, pp. 1112-1112. MA 29.
ISSN: 0959-6658.
PUBLISHER: OXFORD UNIV PRESS INC, JOURNALS DEPT, 2001 EVANS RD, CARY, NC 27513 USA.
DOCUMENT TYPE: Conference; Journal
LANGUAGE: English
REFERENCE COUNT: 0
ENTRY DATE: Entered STN: 1998
Last Updated on STN: 1998

L3 ANSWER 9 OF 9 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
DUPLICATE 5
ACCESSION NUMBER: 1999:17006 BIOSIS
DOCUMENT NUMBER: PREV199900017006
TITLE: Cloning and characterization of a human **glycosyl sulfotransferase** that is restricted to high

endothelial venules and confers expression of the L-selectin recognition epitope 6-sulfo sialyl Lewis X.
AUTHOR(S): Bistrup, Annette [Reprint author]; Bakhta, Sunil; Tangemann, Kirsten; Lee, Jin Kyu; Gunn, Michael D.; Belov, Yevgeniy Y.; Kannagi, Reiji; Hemmerich, Stefan; Rosen, Steven D.
CORPORATE SOURCE: Univ. Calif., San Francisco, CA, USA
SOURCE: Molecular Biology of the Cell, (Nov., 1998) Vol. 9, No. SUPPL., pp. 124A. print.
Meeting Info.: 38th Annual Meeting of the American Society for Cell Biology. San Francisco, California, USA. December 12-16, 1998. American Society for Cell Biology.
CODEN: MBCEEV. ISSN: 1059-1524.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 20 Jan 1999
Last Updated on STN: 20 Jan 1999

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     FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS,
     LIFESCI' ENTERED AT 10:14:17 ON 03 MAR 2006
L1             0 S "GST4(W)ALPHA"
L2            14 S GLYCOSYL (W) SULFOTRANSFERASE?
L3             9 DUP REM L2 (5 DUPLICATES REMOVED)

=> s glycosyl (w) transferase?
L4          2884 GLYCOSYL (W) TRANSFERASE?

=> s clon? or express? or recombinant
L5       7563699 CLON? OR EXPRESS? OR RECOMBINANT

=> s l4 and l5
L6           765 L4 AND L5

=> s "Gst"
L7         57763 "GST"

=> s l6 and l7
L8             7 L6 AND L7

=> dup rem l8
PROCESSING COMPLETED FOR L8
L9             4 DUP REM L8 (3 DUPLICATES REMOVED)

=> d 1-4 ibib ab

L9   ANSWER 1 OF 4  BIOSIS  COPYRIGHT (c) 2006 The Thomson Corporation  on STN
ACCESSION NUMBER:   2005:547254  BIOSIS
DOCUMENT NUMBER:    PREV200510344522
TITLE:              Methods of inhibition using glycosyl sulfotransferase-3.
AUTHOR(S):          Bistrup, Annette [Inventor]; Rosen, Steven D. [Inventor];
                    Tangemann, Kirsten [Inventor]; Hemmerich, Stefan [Inventor]
CORPORATE SOURCE:   San Francisco, CA USA
                    ASSIGNEE: The Regents of the University of the California;
                    Syntex (U.S.A.) INC
PATENT INFORMATION: US 06844175 20050118
SOURCE:             Official Gazette of the United States Patent and Trademark
                    Office Patents, (JAN 18 2005)
                    CODEN: OGUPE7. ISSN: 0098-1133.
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DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 7 Dec 2005
Last Updated on STN: 7 Dec 2005

AB A novel human glycosylsulfotransferase **expressed** in high endothelial cells (**GST**-3) and polypeptides related thereto, as well as nucleic acid compositions encoding the same, are provided. The subject polypeptides and nucleic acid find use in a variety of applications, including research, diagnostic, and therapeutic agent screening applications. Also provided are methods of inhibiting selectin mediated binding events and methods of treating disease conditions associated therewith, particularly by administering an inhibitor of at least one of **GST**-3 or KSGal6ST, or homologues thereof

L9 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:865474 HCAPLUS
DOCUMENT NUMBER: 143:244071
TITLE: Characterization and sequence of human and murine glycosyl sulfotransferase 3 (**GST**-3 or HEC-GlcNAc6ST) **expressed** in high endothelial cells and involvement of **GST**-3 in selectin ligands formation
INVENTOR(S): Bistrup, Annette; Rosen, Steven D.; Hemmerich, Stefan
PATENT ASSIGNEE(S): The Regents of the University of California, USA; Syntex USA, Llc
SOURCE: U.S., 46 pp., Cont.-in-part of Appl. No. PCT/US99/04316.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6933142	B1	20050823	US 2000-645078	20000823
US 6265192	B1	20010724	US 1998-45284	19980320
US 6365365	B1	20020402	US 1998-190911	19981112
WO 9949018	A1	19990930	WO 1999-US4316	19990226

W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:
US 1998-45284 A2 19980320
US 1998-190911 A2 19981112
WO 1999-US4316 A2 19990226

AB A mammalian glycosyl sulfotransferase 3 **expressed** in high endothelial cells (HEC) (i.e., **GST**-3 or HEC-GlcNAc6ST) and polypeptides related thereto, as well as nucleic acid compns. encoding the same, are provided. More specifically, the full length cDNA sequences and the encoded amino acid sequences of human and murine **GST**-3 are disclosed. The subject polypeptides and nucleic acid compns. may find use in a variety of applications, including diagnostic, and therapeutic agent screening applications. Also provided are methods of inhibiting selectin mediated binding events and possible methods of treating disease conditions associated therewith, particularly by administering an inhibitor of at least one of HEC-GlcNAc6ST and/or the previously described **glycosyl transferase** 1 (**GST**-1, KSGal6ST) or homologs thereof. It was shown that **GST**-1 and **GST**-3 contribute to the generation of L-selectin ligand activity. HEC-GlcNAc6ST

is implicated in the elaboration of these ligands within lymph node high endothelium venules.

REFERENCE COUNT: 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 4 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2002104521 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11804867
TITLE: Role of NRF2 in protection against hyperoxic lung injury in mice.
AUTHOR: Cho Hye-Youn; Jedlicka Anne E; Reddy Sekhar P M; Kensler Thomas W; Yamamoto Masayuki; Zhang Liu-Yi; Kleeberger Steven R
CORPORATE SOURCE: Department of Environmental Health Sciences, The Bloomberg School of Hygiene and Public Health, Johns Hopkins University, Baltimore, Maryland, USA.
CONTRACT NUMBER: CA-44530 (NCI)
ES-08319 (NIEHS)
ES-09606 (NIEHS)
HL-57142 (NHLBI)
HL-58122 (NHLBI)
HL-66109 (NHLBI)
SOURCE: American journal of respiratory cell and molecular biology, (2002 Feb) Vol. 26, No. 2, pp. 175-82.
Journal code: 8917225. ISSN: 1044-1549.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200202
ENTRY DATE: Entered STN: 20020212
Last Updated on STN: 20020227
Entered Medline: 20020226

AB NRF2 is a transcription factor important in the protection against carcinogenesis and oxidative stress through antioxidant response element (ARE)-mediated transcriptional activation of several phase 2 detoxifying and antioxidant enzymes. This study was designed to determine the role of NRF2 in the pathogenesis of hyperoxic lung injury by comparing pulmonary responses to 95-98% oxygen between mice with site-directed mutation of the gene for NRF2 (Nrf2-/-) and wild-type mice (Nrf2+/+). Pulmonary hyperpermeability, macrophage inflammation, and epithelial injury in Nrf2-/- mice were 7.6-fold, 47%, and 43% greater, respectively, compared with Nrf2+/+ mice after 72 h hyperoxia exposure. Hyperoxia markedly elevated the **expression** of NRF2 mRNA and DNA-binding activity of NRF2 in the lungs of Nrf2+/+ mice. mRNA **expression** for ARE-responsive lung antioxidant and phase 2 enzymes was evaluated in both genotypes of mice to identify potential downstream molecular mechanisms of NRF2 in hyperoxic lung responses. Hyperoxia-induced mRNA levels of NAD(P)H:quinone oxidoreductase 1 (NQO1), glutathione-S-transferase (**GST**)-Ya and -Yc subunits, UDP **glycosyl transferase** (UGT), glutathione peroxidase-2 (GPx2), and heme oxygenase-1 (HO-1) were significantly lower in Nrf2-/- mice compared with Nrf2+/+ mice. Consistent with differential mRNA **expression**, NQO1 and total **GST** activities were significantly lower in Nrf2-/- mice compared with Nrf2+/+ mice after hyperoxia. Results demonstrated that NRF2 has a significant protective role against pulmonary hyperoxic injury in mice, possibly through transcriptional activation of lung antioxidant defense enzymes.

L9 ANSWER 4 OF 4 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 2002:335 BIOSIS
DOCUMENT NUMBER: PREV200200000335
TITLE: Identification of rabaptin-5, rabex-5, and GM130 as putative effectors of rab33b, a regulator of retrograde

traffic between the Golgi apparatus and ER.
AUTHOR(S): Valsdottir, Rebekka; Hashimoto, Hitoshi; Ashman, Keith; Koda, Toshiaki; Storrie, Brian; Nilsson, Tommy [Reprint author]
CORPORATE SOURCE: Cell Biology and Biophysics Programme, EMBL, Meyerhofstrasse 1, D-69117, Heidelberg, Germany nilsson@embl-heidelberg.de
SOURCE: FEBS Letters, (16 November, 2001) Vol. 508, No. 2, pp. 201-209. print.
CODEN: FEBLAL. ISSN: 0014-5793.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 28 Dec 2001
Last Updated on STN: 25 Feb 2002

AB The role of rab33b, a Golgi-specific rab protein, was investigated. Microinjection of rab33b mutants stabilised in the GTP-specific state resulted in a marked inhibition of anterograde transport within the Golgi and in the recycling of **glycosyl-transferases** from the Golgi to the ER, respectively. A **GST**-rab33b fusion protein stabilised in its GTP form was found to interact by Western blotting or mass spectroscopy with Golgi protein GM130 and rabaptin-5 and rabex-5, two rab effector molecules thought to function exclusively in the endocytic pathway. A similar binding was seen to rab1 but not to rab6, both Golgi tabs. In contrast, rab5 was as expected, shown to bind rabaptin-5 and rabex-5 as well as the endosomal effector protein EEA1 but not GM130. No binding of EEA1 was seen to any of the Golgi rabs.

=> d his

(FILE 'HOME' ENTERED AT 10:13:34 ON 03 MAR 2006)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 10:14:17 ON 03 MAR 2006

```
L1            0 S "GST4(W)ALPHA"
L2           14 S GLYCOSYL (W) SULFOTRANSFERASE?
L3            9 DUP REM L2 (5 DUPLICATES REMOVED)
L4         2884 S GLYCOSYL (W) TRANSFERASE?
L5      7563699 S CLON? OR EXPRESS? OR RECOMBINANT
L6          765 S L4 AND L5
L7        57763 S "GST"
L8            7 S L6 AND L7
L9            4 DUP REM L8 (3 DUPLICATES REMOVED)
```

=> de rosen S D/au
DE IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> e rosen S D/au

```
E1            8     ROSEN S B/AU
E2          154     ROSEN S C/AU
E3          789 --> ROSEN S D/AU
E4            8     ROSEN S D */AU
E5            1     ROSEN S D C/AU
E6           60     ROSEN S E/AU
E7           13     ROSEN S F/AU
E8          145     ROSEN S G/AU
E9           50     ROSEN S H/AU
E10          47     ROSEN S I/AU
E11          16     ROSEN S J/AU
E12          84     ROSEN S L/AU
```

```
=> s e3
L10         789 "ROSEN S D"/AU

=> e lee j k/au
E1          197     LEE J JACK/AU
E2            1     LEE J JR/AU
E3         4665 --> LEE J K/AU
E4            4     LEE J K F/AU
E5            4     LEE J K H/AU
E6            1     LEE J K I/AU
E7            5     LEE J K J/AU
E8            1     LEE J K JERRY/AU
E9            3     LEE J K L/AU
E10           3     LEE J K M/AU
E11           3     LEE J K N/AU
E12         208     LEE J K P/AU

=> s e3
L11        4665 "LEE J K"/AU

=> e hemmerich s d/au
E1            1     HEMMERICH ROLF H/AU
E2          130     HEMMERICH S/AU
E3            0 --> HEMMERICH S D/AU
E4           94     HEMMERICH STEFAN/AU
E5            2     HEMMERICH W/AU
E6            1     HEMMERICK GEO/AU
E7            1     HEMMERICK PETER/AU
E8           24     HEMMERLE A/AU
E9            9     HEMMERLE A V/AU
E10          13     HEMMERLE ANKE/AU
E11          12     HEMMERLE C/AU
E12           8     HEMMERLE CHRISTINE/AU

=> s e2
L12         130 "HEMMERICH S"/AU

=> d his

     (FILE 'HOME' ENTERED AT 10:13:34 ON 03 MAR 2006)

     FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS,
     LIFESCI' ENTERED AT 10:14:17 ON 03 MAR 2006
L1            0 S "GST4(W)ALPHA"
L2           14 S GLYCOSYL (W) SULFOTRANSFERASE?
L3            9 DUP REM L2 (5 DUPLICATES REMOVED)
L4         2884 S GLYCOSYL (W) TRANSFERASE?
L5      7563699 S CLON? OR EXPRESS? OR RECOMBINANT
L6          765 S L4 AND L5
L7        57763 S "GST"
L8            7 S L6 AND L7
L9            4 DUP REM L8 (3 DUPLICATES REMOVED)
                E ROSEN S D/AU
L10         789 S E3
                E LEE J K/AU
L11        4665 S E3
                E HEMMERICH S D/AU
L12         130 S E2

=> s l10 or l11 or l12
L13        5491 L10 OR L11 OR L12

=> s l4 and l13
L14           0 L4 AND L13
```

=> s l7 and l13
L15 25 L7 AND L13

=> dup rem l15
PROCESSING COMPLETED FOR L15
L16 11 DUP REM L15 (14 DUPLICATES REMOVED)

=> d 1-11 ibib ab

L16 ANSWER 1 OF 11 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2005-24126 BIOTECHDS
TITLE: New glycosyl sulfotransferase-3 (**GST**-3) polypeptide useful for identifying therapeutic agents, diagnosis or in the treatment of inflammation and autoimmune related disorders;
production of a recombinant glycosyl-sulfotransferase-3 useful for an inflammation and autoimmune disease therapy and drug screening application
AUTHOR: BISTRUP A; **ROSEN S D**; **HEMMERICH S**
PATENT ASSIGNEE: UNIV CALIFORNIA; SYNTEX USA LLC
PATENT INFO: US 6933142 23 Aug 2005
APPLICATION INFO: US 2000-645078 23 Aug 2000
PRIORITY INFO: US 2000-645078 23 Aug 2000; US 1998-45284 20 Mar 1998
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2005-568980 [58]
AB DERWENT ABSTRACT:
NOVELTY - A glycosyl sulfotransferase-3 (**GST**-3) polypeptide present in other than its natural environment, comprising an amino acid sequence having at least 60% sequence identity to a fully defined sequence of 386 amino acids (SEQ ID NO: 2) and encoded by a nucleic acid comprising a nucleotide sequence having at least 75% identity to a fully defined sequence of 2043 bp (SEQ ID NO: 1), is new.
DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a composition comprising the **GST**-3 polypeptide cited above.
BIOTECHNOLOGY - Preferred Polypeptide: The polypeptide comprises SEQ ID NO: 2, and catalyzes the transfer of a sulfate group from a donor compound to a selectin ligand. The polypeptide is encoded by a nucleic acid comprising a nucleotide sequence having at least 90 or 95% identity to SEQ ID NO: 1. The selectin ligand is an E-, P- or L-selectin ligand that is GlyCAM-1, CD34, MadCAM-1, Sgp200 or podocalyxin.
ACTIVITY - Antiinflammatory; Immunosuppressive. No biological data given.
MECHANISM OF ACTION - Glycosyl sulfotransferase-3 agonist.
USE - **GST**-3 is useful for identifying therapeutic agents, diagnosis or in the treatment of inflammation and autoimmune related disorders
ADMINISTRATION - Routes of administration of the pharmaceutical compositions include oral, intramuscular, intraperitoneal, intravenous, transdermal, intratracheal, rectal and buccal. No dosages given.
EXAMPLE - No relevant example given.(46 pages)

L16 ANSWER 2 OF 11 EMBASE COPYRIGHT (c) 2006 Elsevier B.V. All rights reserved on STN
ACCESSION NUMBER: 2005452912 EMBASE
TITLE: A HEV-restricted sulfotransferase is expressed in rheumatoid arthritis synovium and is induced by lymphotoxin-α/β and TNF-α in cultured endothelial cells.
AUTHOR: Pablos J.L.; Santiago B.; Tsay D.; Singer M.S.; Palao G.; Galindo M.; **Rosen S.D.**
CORPORATE SOURCE: J.L. Pablos, Servicio de Reumatologia, Unidad de Investigacion, Hospital 12 de Octubre, 28041 Madrid, Spain.

jlpablos@h12o.es
SOURCE: BMC Immunology, (7 Mar 2005) Vol. 6, pp. 9p. .
Refs: 47
ISSN: 1471-2172 CODEN: BIMMCV
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
026 Immunology, Serology and Transplantation
029 Clinical Biochemistry
031 Arthritis and Rheumatism
LANGUAGE: English
SUMMARY LANGUAGE: English
ENTRY DATE: Entered STN: 20051027
Last Updated on STN: 20051027
AB Background: The recruitment of lymphocytes to secondary lymphoid organs relies on interactions of circulating cells with high endothelial venules (HEV). HEV are exclusive to these organs under physiological conditions, but they can develop in chronically-inflamed tissues. The interaction of L-selectin on lymphocytes with sulfated glycoprotein ligands on HEV results in lymphocyte rolling, which represents the initial step in lymphocyte homing. HEV expression of GlcNAc6ST-2 (also known as HEC-GlcNAc6ST, **GST**-3, LSST or CHST4), an HEV-restricted sulfotransferase, is essential for the elaboration of L-selectin functional ligands as well as a critical epitope recognized by MECA-79 mAb. Results: We examined the expression of GlcNAc6ST-2 in relationship to the MECA-79 epitope in rheumatoid arthritis (RA) synovial vessels. Expression of GlcNAc6ST-2 was specific to RA synovial tissues as compared to osteoarthritis synovial tissues and localized to endothelial cells of HEV-like vessels and small flat-walled vessels. Double MECA-79 and GlcNAc6ST-2 staining showed colocalization of the MECA-79 epitope and GlcNAc6ST-2. We further found that both TNF-α and lymphotoxin-αβ induced GlcNAc6ST-2 mRNA and protein in cultured human umbilical vein endothelial cells. Conclusion: These observations demonstrate that GlcNAc6ST-2 is induced in RA vessels and provide potential cytokine pathways for its induction. GlcNAc6ST-2 is a novel marker of activated vessels within RA ectopic lymphoid aggregates. This enzyme represents a potential therapeutic target for RA. .COPYRGT. 2005 Pablos et al; licensee BioMed Central Ltd.

L16 ANSWER 3 OF 11 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2001-06117 BIOTECHDS
TITLE: New glycosyl-sulfotransferases (**GST**)-4-alpha, **GST**-4-beta and **GST**-6 for diagnostic and therapeutic agent screening applications; vector-mediated gene transfer, expression in host cell, monoclonal antibody and transgenic animal for selectin binding-inhibitor, drug screening and disease therapy, diagnosis and gene therapy
AUTHOR: **Rosen S D; Lee J K; Hemmerich S**
PATENT ASSIGNEE: Univ.California
LOCATION: Oakland, CA, USA.
PATENT INFO: WO 2001006015 25 Jan 2001
APPLICATION INFO: WO 2000-US19741 19 Jul 2000
PRIORITY INFO: US 2000-593828 13 Jul 2000; US 1999-144694 20 Jul 1999
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2001-138471 [14]
AB A glycosyl-sulfotransferase (**GST**) (I) selected from the group **GST**-4-alpha, **GST**-4-beta and **GST**-6, is claimed. Also claimed are: a fragment of (I); a DNA (II) encoding (I); a DNA or its mimetic that hybridizes to (II) or its complementary sequence; an expression cassette (III) containing a transcriptional initiation region functional in an expression host and (II) under the transcriptional regulation of the transcriptional initiation region and a

transcriptional termination region; a host cell (IV) containing (III); the cellular progeny of (IV); a method of producing (I); a monoclonal antibody that specifically binds to (I); and a non-human transgenic animal model for gene function, where the animal contains an introduced alteration in a gene encoding (I). (I) is useful for inhibiting a binding event between a selectin and a selectin ligand, which involves contacting the selectin with a non-sulfated selectin ligand. (II) encoding (I) is also useful in gene therapy to treat disorders such as acute or chronic inflammation and transplant tissue rejection and also for disease diagnosis. (44pp)

L16 ANSWER 4 OF 11 MEDLINE on STN DUPLICATE 1
ACCESSION NUMBER: 2001253103 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11352640
TITLE: Sulfation of endothelial mucin by corneal keratan N-acetylglucosamine 6-O-sulfotransferase (**GST**-4beta).
AUTHOR: Bartes A; Bhakta S; **Hemmerich S**
CORPORATE SOURCE: Department of Respiratory Diseases, Roche Bioscience, 3401 Hillview Avenue, Palo Alto, California 94304, USA.
SOURCE: Biochemical and biophysical research communications, (2001 Apr 13) Vol. 282, No. 4, pp. 928-33.
Journal code: 0372516. ISSN: 0006-291X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200106
ENTRY DATE: Entered STN: 20010611
Last Updated on STN: 20021211
Entered Medline: 20010607

AB Intestinal N-acetylglucosamine 6-O-sulfotransferase (I-GlcNAc6ST, **GST**-4alpha) and corneal N-acetylglucosamine 6-O-sulfotransferases (C-GlcNAc6ST, **GST**-4beta) are two highly homologous GlcNAc 6-O-sulfotransferase isozymes encoded by two intronless open reading frames that reside approximately 50 kb apart on human chromosome 16q23.1. I-GlcNAc6ST has been shown to catalyze 6-O-sulfation of the endothelial mucin GlyCAM-1. C-GlcNAc6ST catalyzes 6-O-sulfation of GlcNAc in keratan sulfate and null-mutations in its encoding gene cause human macular corneal dystrophy. We show here that C-GlcNAc6ST efficiently catalyzes sulfation of GlyCAM-1 when coexpressed with the latter in COS-7 cells. We have further compared expression in human of both enzymes by Northern analysis with isozyme-specific probes. While I-GlcNAc6T is expressed mostly in intestinal tissue, larger C-GlcNAc6ST transcripts are found predominantly in the brain.

L16 ANSWER 5 OF 11 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2001205848 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11181564
TITLE: Chromosomal localization and genomic organization for the galactose/ N-acetylgalactosamine/N-acetylglucosamine 6-O-sulfotransferase gene family.
AUTHOR: **Hemmerich S; Lee J K**; Bhakta S; Bistrup A; Ruddle N R; **Rosen S D**
CORPORATE SOURCE: Department of Respiratory Diseases, Roche Bioscience, Palo Alto, CA 94304, USA.
CONTRACT NUMBER: RO1GM5741 (NIGMS)
SOURCE: Glycobiology, (2001 Jan) Vol. 11, No. 1, pp. 75-87.
Journal code: 9104124. ISSN: 0959-6658.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals

OTHER SOURCE: GENBANK-AF176838; GENBANK-AF280086; GENBANK-AF280087; GENBANK-AF280088; GENBANK-AF280089; GENBANK-AI824100
ENTRY MONTH: 200106
ENTRY DATE: Entered STN: 20010611
Last Updated on STN: 20010611
Entered Medline: 20010607

AB The galactose/N-acetylgalactosamine/N-acetylglucosamine 6-O-sulfotransferases (**GSTs**) are a family of Golgi-resident enzymes that transfer sulfate from 3'phosphoadenosine 5'phospho-sulfate to the 6-hydroxyl group of galactose, N-acetylgalactosamine, or N-acetylglucosamine in nascent glycoproteins. These sulfation modifications are functionally important in settings as diverse as cartilage structure and lymphocyte homing. To date six members of this gene family have been described in human and in mouse. We have determined the chromosomal localization of these genes as well as their genomic organization. While the broadly expressed enzymes implicated in proteoglycan biosynthesis are located on different chromosomes, the highly tissue specific enzymes **GST**-3 and 4 are encoded by genes located both in band q23.1--23.2 on chromosome 16. In the mouse, both genes reside in the syntenic region 8E1 on chromosome 8. This cross-species conserved clustering is suggestive of related functional roles for these genes. The human GST4 locus actually contains two highly similar open reading frames (ORF) that are 50 kb apart and encode two highly similar enzyme isoforms termed **GST**-4 alpha and **GST**-4 beta.
All genes except GST0 (chondroitin 6-O-sulfotransferase) contain intron-less ORFs. With one exception these are fused directly to sequences encoding the 3' untranslated regions (UTR) of the respective mature mRNAs. The 5' UTRs of these mRNAs are usually encoded by a number of short exons 5' of the respective ORF. 5'UTRs of the same enzyme expressed in different cell types are sometimes derived from different exons located upstream of the ORF. The genomic organization of the **GSTs** resembles that of certain glycosyltransferase gene families.

L16 ANSWER 6 OF 11 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2001098512 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10956661
TITLE: Sulfation of N-acetylglucosamine by chondroitin 6-sulfotransferase 2 (**GST**-5).
AUTHOR: Bhakta S; Bartes A; Bowman K G; Kao W M; Polsky I; **Lee J K**; Cook B N; Bruehl R E; **Rosen S D**; Bertozzi C R; **Hemmerich S**
CORPORATE SOURCE: Department of Respiratory Diseases, Roche Bioscience, Palo Alto, California 94304, USA.
CONTRACT NUMBER: R37GM23547 (NIGMS)
RO1GM5741 (NIGMS)
RO1GM59907-01 (NIGMS)
SOURCE: The Journal of biological chemistry, (2000 Dec 22) Vol. 275, No. 51, pp. 40226-34.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF280089
ENTRY MONTH: 200102
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20021211
Entered Medline: 20010201

AB Based on sequence homology with a previously cloned human GlcNAc 6-O-sulfotransferase, we have identified an open reading frame (ORF) encoding a novel member of the Gal/GalNAc/GlcNAc 6-O-sulfotransferase (**GST**) family termed **GST**-5 on the human X chromosome (band Xp11). **GST**-5 has recently been characterized as a novel GalNAc 6-O-sulfotransferase termed chondroitin 6-sulfotransferase-2 (Kitagawa,

H., Fujita, M., Itio, N., and Sugahara K. (2000) J. Biol. Chemical 275, 21075-21080). We have coexpressed a human **GST**-5 cDNA with a GlyCAM-1/IgG fusion protein in COS-7 cells and observed four-fold enhanced [(35)S]sulfate incorporation into this mucin acceptor. All mucin-associated [(35)S]sulfate was incorporated as GlcNAc-6-sulfate or Galbeta1-->4GlcNAc-6-sulfate. **GST**-5 was also expressed in soluble epitope-tagged form and found to catalyze 6-O-sulfation of GlcNAc residues in synthetic acceptor structures. In particular, **GST**-5 was found to catalyze 6-O-sulfation of beta-benzyl GlcNAc but not alpha- or beta-benzyl GalNAc. In the mouse genome we have found a homologous ORF that predicts a novel murine GlcNAc 6-O-sulfotransferase with 88% identity to the human enzyme. This gene was mapped to mouse chromosome X at band XA3.1-3.2. **GST**-5 is the newest member of an emerging family of carbohydrate 6-O-sulfotransferases that includes chondroitin 6-sulfotransferase (**GST**-0), keratan-sulfate galactose 6-O-sulfotransferase (**GST**-1), the ubiquitously expressed GlcNAc 6-O-sulfotransferase (**GST**-2), high endothelial cell GlcNAc 6-O-sulfotransferase (**GST**-3), and intestinal GlcNAc 6-O-sulfotransferase (**GST**-4).

L16 ANSWER 7 OF 11 MEDLINE on STN DUPLICATE 4
ACCESSION NUMBER: 2000487950 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11035075
TITLE: Distinct human T cell repertoires mediate immediate and delayed-type hypersensitivity to the Trichophyton antigen, Tri r 2.
AUTHOR: Woodfolk J A; Sung S S; Benjamin D C; **Lee J K**; Platts-Mills T A
CORPORATE SOURCE: Asthma and Allergic Diseases Center, Department of Internal Medicine, University of Virginia, Charlottesville, VA 22908, USA.. jaw4m@virginia.edu
CONTRACT NUMBER: AI30840 (NIAID)
NIEHS/NIAID-34607 (NCEH)
SOURCE: Journal of immunology (Baltimore, Md. : 1950), (2000 Oct 15) Vol. 165, No. 8, pp. 4379-87.
Journal code: 2985117R. ISSN: 0022-1767.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 200011
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20001114

AB The 29-kDa subtilase homologue, Tri r 2, derived from the dermatophyte fungus Trichophyton rubrum, exhibits unique immunologic characteristics in its ability to elicit immediate (IH) and delayed-type (DTH) hypersensitivity skin tests in different individuals. Thus, Tri r 2 provides a model for comparing the T cell repertoire in subjects with distinct immune responses to a single Ag. Recombinant Tri r 2 produced as a **GST** fusion protein in Escherichia coli stimulated strong in vitro lymphoproliferative responses in 10 IH and 10 DTH responders. Patterns of T cell epitope recognition were compared between skin test groups using 28 overlapping peptides (each in 12 replicate wells) derived from Tri r 2 to stimulate T lymphocyte proliferation in vitro. Peptide 5 (P5; aa 41-60) induced the strongest response in DTH subjects and showed the largest difference between DTH and IH responders in proliferation (mean standardized index, 2.22 and 0.82, respectively; p = 0.0047) and number of positive wells (81 vs 12). Responses to P5 were associated with diverse HLA haplotypes. These results showed that P5 contains an immunodominant epitope specifically associated with DTH and that this peptide is recognized in a permissive manner. Cross-validated linear discriminant analysis using T cell proliferative responses to two regions of Tri r 2 (aa 51-90 and 231-270) gave a 95% predictive accuracy for

classification of subjects into IH or DTH groups. We conclude that different immune responses to Trichophyton are mediated by distinct T cell repertoires between individuals with IH and DTH reactions to Tri r 2.

L16 ANSWER 8 OF 11 MEDLINE on STN DUPLICATE 5
ACCESSION NUMBER: 2001323755 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11097350
TITLE: Influence of glutathione S-transferase M1 and T1 genotypes on larynx cancer risk among Korean smokers.
AUTHOR: Hong Y J; **Lee J K**; Lee G H; Hong S I
CORPORATE SOURCE: Department of Clinical Pathology, Korea Cancer Center Hospital, Seoul.. clinchem@kcchsun.kcch.re.kr
SOURCE: Clinical chemistry and laboratory medicine : CCLM / FESCC, (2000 Sep) Vol. 38, No. 9, pp. 917-9.
Journal code: 9806306. ISSN: 1434-6621.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200106
ENTRY DATE: Entered STN: 20010611
Last Updated on STN: 20010611
Entered Medline: 20010607

AB Glutathione S-transferase (**GST**) isoenzymes are involved in the detoxification of major carcinogens present in tobacco smoke. It is thus conceivable that deficiency in **GST** activity due to homozygous deletions of the GSTM1 and GSTT1 genes (the null genotypes) may modulate susceptibility to smoking-induced cancers. The influence of the GSTM1 and GSTT1 null genotypes on larynx cancer risk among the Korean population were evaluated using peripheral blood DNA from 82 larynx cancer patients and 63 healthy controls, all of whom were male current smokers. Increased larynx cancer risk was related to the GSTM1 null genotype (odds ratio (OR)=3.53, 95% confidence interval (CI)=1.27-9.83). The OR associated with the GSTT1 null genotype was also increased, but did not reach statistical significance (OR=1.83, 95% CI=0.70-4.79). Individuals lacking both the GSTM1 and GSTT1 genes were at a significantly higher risk for larynx cancer than individuals with both genes present (OR=4.04, 95% CI=1.33-12.30). These data confirm that the GSTM1 null genotype is an important risk modifier for larynx cancer among Korean smokers and combined GSTM1 and GSTT1 null genotypes could be a useful predictor of genetic susceptibility to larynx cancer.

L16 ANSWER 9 OF 11 SCISEARCH COPYRIGHT (c) 2006 The Thomson Corporation on STN
ACCESSION NUMBER: 2001:123964 SCISEARCH
THE GENUINE ARTICLE: 377QY
TITLE: Identification and molecular cloning of a novel putative carbohydrate sulfotransferase with homology to the **GST**-family of sulfotransferases
AUTHOR: Bistrup A (Reprint); Rosen S; **Hemmerich S**
CORPORATE SOURCE: Univ Calif San Francisco, San Francisco, CA 94143 USA; Roche Biosci, Palo Alto, CA USA
COUNTRY OF AUTHOR: USA
SOURCE: MOLECULAR BIOLOGY OF THE CELL, (DEC 2000) Vol. 11, Supp. [S], pp. 42A-43A. MA 221.
ISSN: 1059-1524.
PUBLISHER: AMER SOC CELL BIOLOGY, 8120 WOODMONT AVE, STE 750, BETHESDA, MD 20814-2755 USA.
DOCUMENT TYPE: Conference; Journal
LANGUAGE: English
REFERENCE COUNT: 0
ENTRY DATE: Entered STN: 18 Feb 2001
Last Updated on STN: 18 Feb 2001

L16 ANSWER 10 OF 11 BIOTECHDS COPYRIGHT 2006 THE THOMSON CORP. on STN
ACCESSION NUMBER: 2000-00104 BIOTECHDS
TITLE: Human and mouse glycosyl-sulfotransferase-3 and related polynucleotides;
expression in mammalian host cell and antibody, used for disease diagnosis and gene therapy
AUTHOR: Bistrup A; **Rosen S D**; Tangemann K; **Hemmerich S**
PATENT ASSIGNEE: Univ.California; Syntex
LOCATION: Oakland, CA, USA; Palo Alto, CA, USA.
PATENT INFO: WO 9949018 30 Sep 1999
APPLICATION INFO: WO 1999-US4316 26 Feb 1999
PRIORITY INFO: US 1998-190911 12 Nov 1998; US 1998-45284 20 Mar 1998
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1999-580442 [49]
AB Glycosyl-sulfotransferase-3 (**GST**-3, 386 or 388 amino acids) present in other than its natural environment, is new. Also claimed are: a nucleic acid (2,032 or 1,893 bp) which encodes **GST**-3; an expression cassette under the control of initiation sequences and termination sequences; a host cell; a method of producing **GST**-3; a monoclonal antibody; a method for inhibiting the binding of a selectin and a selectin ligand; a method of inhibiting a selectin mediated binding event in a mammalian host; a method of modulating a symptom of a disease condition associated with a selectin mediated binding event; a method of diagnosing a disease state related to the abnormal levels of a sulfotransferase chosen from **GST**-3 and KSGal6ST; a method of determining whether an agent is capable of modulating the activity of a sulfotransferase chosen from **GST**-3 and KSGal6ST; and a non-human transgenic animal model for **gst**-3 gene function. The nucleic acid sequences, DNA probes and DNA primers derived from these, proteins and antibodies are useful in detecting homologs. The products are useful in the diagnosis of diseases associated with selectin binding interactions. (59pp)

L16 ANSWER 11 OF 11 MEDLINE on STN DUPLICATE 6
ACCESSION NUMBER: 1999423499 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10491328
TITLE: Cloning and characterization of a mammalian N-acetylglucosamine-6-sulfotransferase that is highly restricted to intestinal tissue.
AUTHOR: **Lee J K**; Bhakta S; **Rosen S D**; **Hemmerich S**
CORPORATE SOURCE: Department of Anatomy and Program in Immunology, University of California, San Francisco, California, 94143, USA.
CONTRACT NUMBER: R37GM23547 (NIGMS)
RO1GM5741 (NIGMS)
SOURCE: Biochemical and biophysical research communications, (1999 Sep 24) Vol. 263, No. 2, pp. 543-9.
Journal code: 0372516. ISSN: 0006-291X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF176838; GENBANK-AF176839; GENBANK-AF176840; GENBANK-AF176841
ENTRY MONTH: 199910
ENTRY DATE: Entered STN: 19991101
Last Updated on STN: 20021210
Entered Medline: 19991021
AB Using the sequences of a galactose 6-O-sulfotransferase and an N-acetylglucosamine 6-O-sulfotransferase as probes in an EST approach, we have identified a highly related cDNA in human and an apparent orthologue in mouse. The cDNAs predict type II transmembrane proteins that

constitute new members of the Gal/GalNAc/GlcNAc 6-O-sulfotransferase (**GST**) family. Members of this family have previously been implicated in the sulfation of GAG chains within proteoglycans and the sulfation of O-linked chains within sialomucin ligands for l-selectin. Expression of the newly identified cDNA in COS cells led to the addition of sulfate to C-6 of GlcNAc in an acceptor glycoprotein. The tissue expression of transcripts corresponding to the cDNA was highly restricted to the small intestine and colon in humans. Based on these characteristics, the novel sulfotransferase is designated I-GlcNAc6ST for intestinal GlcNAc 6-O-sulfotransferase.

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(FILE 'HOME' ENTERED AT 10:13:34 ON 03 MAR 2006)

FILE 'MEDLINE, EMBASE, BIOSIS, BIOTECHDS, SCISEARCH, HCAPLUS, NTIS, LIFESCI' ENTERED AT 10:14:17 ON 03 MAR 2006

L1	0	S "GST4(W)ALPHA"
L2	14	S GLYCOSYL (W) SULFOTRANSFERASE?
L3	9	DUP REM L2 (5 DUPLICATES REMOVED)
L4	2884	S GLYCOSYL (W) TRANSFERASE?
L5	7563699	S CLON? OR EXPRESS? OR RECOMBINANT
L6	765	S L4 AND L5
L7	57763	S "GST"
L8	7	S L6 AND L7
L9	4	DUP REM L8 (3 DUPLICATES REMOVED)
		E ROSEN S D/AU
L10	789	S E3
		E LEE J K/AU
L11	4665	S E3
		E HEMMERICH S D/AU
L12	130	S E2
L13	5491	S L10 OR L11 OR L12
L14	0	S L4 AND L13
L15	25	S L7 AND L13
L16	11	DUP REM L15 (14 DUPLICATES REMOVED)

	L #	Hits	Search Text
1	L1	0	"09593828".pn.
2	L2	1	"6852518".pn.
3	L3	1647966	GST4 (w)alpha
4	L4	0	GST4 adj alpha
5	L5	25	GST4
6	L6	18	Glycosyl adj sulfotransferase$2
7	L7	322459	ROSEN LEE HEMMERICH
8	L8	29	(l5 or l6) and l7

	Issue Date	Pages	Document ID	Title
1	20051006	35	US 20050223443 A1	Inbred corn line PHCEG
2	20050630	33	US 20050144690 A1	Inbred corn line PHEHG
3	20050630	32	US 20050144689 A1	Inbred com line PHACV
4	20050630	34	US 20050144688 A1	Inbred corn line PHAR1
5	20050630	34	US 20050144687 A1	Inbred corn line PHCPR
6	20050602	35	US 20050120439 A1	Inbred corn line PHADA
7	20050526	35	US 20050114953 A1	Inbred corn line PHCMV
8	20050526	35	US 20050114952 A1	Inbred corn line PHCND
9	20050526	35	US 20050114951 A1	Inbred corn line PHC77
10	20050526	30	US 20050114945 A1	Inbred corn line PHCK5
11	20050217	22	US 20050037418 A1	Method and apparatus for assaying a drug candidate to estimate a pharmacokinetic parameter associated therewith
12	20050210	172	US 20050031643 A1	Microorganisms for therapy

13	20041007	23	US 2004019778 5 A1	Method for quantitative measurement of gene expression for indentifying individuals at risk for bronchogenic carcinoma

	Issue Date	Pages	Document ID	Title
14	20040923	140	US 20040185546 A1	Novel glycosyl sulfotransferases GST-4alpha, GST-4beta, & GST-6
15	20040722	293	US 20040142335 A1	Method for determining skin stress or skin ageing in vitro
16	20040212	56	US 20040029149 A1	Human metabolic models and methods
17	20030911	34	US 20030170263 A1	Expression system
18	20030501	78	US 20030082511 A1	Identification of modulatory molecules using inducible promoters
19	20030213	33	US 20030031681 A1	Combined growth factor-deleted and thymidine kinase-deleted vaccinia virus vector
20	20020214	22	US 20020019019 A1	Method and apparatus for assaying a drug candidate to estimate a pharmacokinetic parameter associated therewith
21	20050208	135	US 6852518 B1	Glycosyl sulfotransferases GST-4.alpha., GST-4.beta., and GST-6
22	20041026	22	US 6808938 B2	Method and apparatus for assaying a drug candidate to estimate a pharmacokinetic parameter associated therewith
23	20000711	14	US 6088277 A	Read only memory capable of realizing a high-speed read operation

	Issue Date	Pages	Document ID	Title
24	19861216	22	US 4630188 A	Multi-zone ramp system for digital pulse generator and large scale integrated chip embodying the same
25	19821102	9	US 4357584 A	Acoustic wave devices

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1	20051006	27	US 20050222011 A1	Selectin ligands
2	20041209	101	US 20040249131 A1	Mycobacterial sulfation pathway proteins and methods of use thereof
3	20040923	140	US 20040185546 A1	Novel glycosyl sulfotransferases GST-4alpha, GST-4beta, & GST-6
4	20030925	101	US 20030180321 A1	Mycobacterial sulfation pathway proteins and methods of use thereof
5	20030605	98	US 20030104001 A1	Mycobacterial sulfation pathway proteins and methods of use thereof
6	20021107	36	US 20020164748 A1	Glycosyl sulfotransferase-3
7	20011213	27	US 20010051370 A1	Glycosyl sulfotransferase-3
8	20051213	97	US 6974580 B2	Mycobacterial sulfation pathway proteins and methods of use thereof
9	20051122	26	US 6967093 B2	Glycosyl sulfotransferase-3
10	20050823	46	US 6933142 B1	HEC-G1CNAC6ST
11	20050308	97	US 6863895 B2	Mycobacterial sulfation pathway proteins and methods of use thereof
12	20050222	112	US 6858213 B2	Mycobacterial sulfation pathway proteins and methods of use thereof
13	20050208	135	US 6852518 B1	Glycosyl sulfotransferases GST-4.alpha., GST-4.beta., and GST-6

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14	20050118	38	US 6844175 B2	Methods of inhibition using glycosyl sulfotransferase-3
15	20020528	24	US 6395882 B1	Selectin ligands
16	20020430	18	US 6380371 B1	Endoglycan: a novel protein having selectin ligand and chemokine presentation activity
17	20020402	38	US 6365365 B1	Method of determining whether an agent modulates glycosyl sulfotransferase-3
18	20010724	27	US 6265192 B1	Glycosly sulfortransferase-3

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15	20030925	101	US 2003018032 1 A1	Mycobacterial sulfation pathway proteins and methods of use thereof

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